

Wakeman, Ohio, 16th, most violent storm ever experienced in this section; buildings torn to pieces or unroofed, orchards and forest trees uprooted, fences scattered and crops destroyed. Cherokee Co., Iowa, 28th, about 4 p. m., tornado from the southwest passed over the town of Cherokee, demolishing several buildings and killing three persons. From this point the storm passed northeastward over portions of Buena Vista, Clay and Palo Alto counties. The destruction was mostly confined to the country, where the loss to farmers was very great. Calhoun Co., Iowa, 30th, about 5 p. m., tornado formed southwest of the town of Manson, and moving northeastward, visited that place, where nearly every house was destroyed and several persons killed. The storm continued its course northeastward through the northwestern portion of Webster Co. and the southeastern portion of Humboldt Co., in both of which the destruction of buildings, crops, fences and farm machinery was very great. Anna, Ill., 2d, 4 miles west of station, heaviest wind storm that has visited this section for years; barns and sheds were blown to pieces, trees stripped of their foliage, and many of the larger ones twisted in two. Boonville, Mo., 7th, very violent, much damage to crops and fences, and several buildings blown down. Tuscola, Ill., 5th, 8 miles north of station, very violent wind storm, causing great damage to fruit trees, crops, buildings and fences. Nokomis, Ill., 29th, 5 p. m., most terrific for years; trees, buildings and fences blown down; farm crops suffered severely; at Shelbyville a heavy freight train was brought to a stand, and could not be moved until storm abated. North Platte, 25th, 5.40 p. m., wind backed to northwest and west and blew a hurricane, with gusts of 90 miles per hour; path of destruction commenced about 10 miles west of station, and pursued a course nearly due east for a distance of about 140 miles. Several wind mills and buildings were blown down before reaching the city, which the storm traversed in the northern part, demolishing the round house of the Union Pacific Railroad Company, killing 1 person and wounding 2 others; one portion of the building was carried to the northeast, and the other to the northwest. Heavy masses, in some instances weighing ten tons, were carried a distance of 200 feet. Storm appeared to follow the Platte river. Washington, D. C., 27th, about 8 p. m., heavy northwest storm; large number of buildings unroofed and partially blown down; shade trees uprooted and fences prostrated; loss estimated at about \$140,000. Course of storm NW. to SE.; no damage committed outside of city limits.

VERIFICATIONS.

Indications.—The detailed comparison of the tri-weekly indications for June, with the telegraphic reports for the succeeding twenty-four hours, shows the general percentage of verifications to be 86.75 per cent. The percentages for the four elements are: Weather, 88.2; Direction of the Wind, 80.1; Temperature, 87.6; Barometer, 81.7 per cent. By geographical districts they are: For New England, 86.3; Middle states, 87.1; South Atlantic states, 88.3; Eastern Gulf states, 89.3; Western Gulf states, 95.1; Lower Lake region, 85.8; Upper Lake region, 84.3; Tennessee and the Ohio valley, 87.7; Upper Mississippi valley, 85.0; Lower Missouri valley, 77.4; Northern Pacific coast region, 75.0; Central Pacific coast region, 90.9; Southern Pacific coast region, 100.0. There were 180 omissions to predict (60 being due to the absence of reports from the Pacific coast), out of 3,690, or 4.88 per cent. Of the 3,510 predictions that have been made, 125, or 3.56 per cent., are considered to have entirely failed; 101, or 2.88 per cent., were one-fourth verified; 389, or 11.08 per cent., were one-half verified; 277, or 7.89 per cent., were three-fourths verified; and 2,618, or 74.59 per cent., were fully verified, so far as can be ascertained from the tri-daily reports.

Cautionary Signals.—Eighty-one Cautionary Signals were displayed during the month, of which 63, or 77.77 per cent., were fully justified by winds of 25 miles per hour, or over at, or within a radius of 100 miles of the station. No Off-Shore Signals were displayed. The above does not include signals ordered at display stations where the velocity is only estimated; 122 winds, of 25 miles or over, were reported, for which no signals were ordered; 14 signals were ordered late.

NAVIGATION.

Stage of Water in Rivers.—In the table on the right hand side of chart No. III are given the highest and lowest stages of water, as observed on the Signal Service river gauges during the month of June, 1881. In the Red, Arkansas and Savannah rivers the highest stage was reached on the 1st, and the lowest between the 23d and 30th. The highest stage in the Missouri river was reached between the 15th and 16th; in the Mississippi with considerable irregularity, but generally between the 15th and 24th; at Keokuk the water reached within 13 inches of the danger line on the 21st; at Vicksburg within 16 inches on the 1st, and New Orleans within 4 inches on the same date. In the Ohio, highest stage between the 10th and 16th, the water rising 85 inches above the danger line at Pittsburg. In the Cumberland, Tennessee and Monongahela the highest stage was reached between the 5th and 13th. The Willamette, at Portland, Or., reached its highest stage on the 16th.

Floods, due to unusually heavy rains, were particularly destructive throughout the western portion of Pennsylvania, and extending thence down the Ohio affected in a less degree the bordering states. *Arkansas:* Little Rock, 9th, lower portion of city flooded; sewers bursted, causing great damage. *District of Columbia:* Washington, 27th, 2.34 inches of rain fell in 38 minutes, flooding cellars and basement stores, and injuring sewers. *Indiana:* Seymour, 8th, most violent and heavy rain-storm ever experienced in this section; railroad tracks washed away and all travel closed; many houses flooded and business partially suspended. *Illinois:*